MATERIAL SAFETY DATA SHEET

SRM Supplier: **National Institute of Standards and Technology**
Standard Reference Materials Program
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SRM Number: 918a
MSDS Number: 918a
SRM Name: Potassium Chloride
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SECTION I. MATERIAL IDENTIFICATION

Material Name: Potassium Chloride

Description: This material is supplied in crystalline form as a 30 g unit.

Other Designations: **Potassium Choride** [Chloropotassuril; Potassium Monochloride; Slow K; Super K; Super K(salt); ClK; Potassium Muriate; Monopotassium Chloride]

Name	Chemical Formula	CAS Registry Number
Potassium Chloride	KCl	7447-40-7

DOT Classification: No classification assigned.

Manufacturer/Supplier: Available from a number of suppliers; current source, Aithaca Chemical Corporation.1[1]

SECTION II. HAZARDOUS INGREDIENTS

Hazardous Component	Nominal Concentration (%)	Exposure Limits and Toxicity Data
Potassium Chloride	~100	Human, Woman, Oral TD_{Lo}: 60 mg/kg/D
		Human, Man, Oral LD_{Lo}: 20 mg/kg
		Rat, Oral LD_{50}: 2600 mg/kg
		Rat, Intraperitoneal LD_{50}: 660 mg/kg
		Rat, Intravenous LD_{50}: 142 mg/kg
		Mouse, Oral LD_{50}: 1500 mg/kg
		Mouse, Intraperitoneal LD_{50}: 620 mg/kg
		Mouse, Intravenous LD_{50}: 117 mg/kg
		Guinea Pig, Oral LD_{Lo}: 2500 mg/kg
		Guinea Pig, Intraperitoneal LD_{Lo}: 900 mg/kg
		Guinea Pig, Subcutaneous LD_{Lo}: 2550 mg/kg
		Guinea Pig, Intravenous LD_{Lo}: 77 mg/kg
		Guinea Pig, Parenteral LD_{Lo}: 40 mg/kg
		Guinea Pig, Intraarterial LD_{Lo}: 130 mg/kg

[1]Identification of certain commercial materials in this MSDS does not imply recommendation or endorsement by the National Institute of Standards and Technology, nor does it imply that the materials are necessarily the best available for the purpose.

SECTION III. PHYSICAL/CHEMICAL CHARACTERISTICS

Potassium Chloride	
Appearance and Odor: white crystals or granules; no odor	**Melting Point:** 770 °C
Relative Molecular Weight: 74.55	**Vapor Pressure:** not applicable
Specific Gravity (Water = 1): 1.984	**Vapor Density:** not applicable
Boiling Point: 1500 °C sublimes	**pH:** 5.4 - 8.6 (5 % solution)
Water Solubility: 23.8 % @ 20 °C	**Solvent Solubility:** soluble in glycerol, alkali, ether; slightly soluble in alcohol; insoluble in acetone

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not Applicable **Method Used:** Not Applicable **Autoignition Temperature:** Not Applicable

Flammability Limits in Air (Volume %): **UPPER:** Not Applicable
LOWER: Not Applicable

Unusual Fire and Explosion Hazards: This material is a negligible fire hazard.

Extinguishing Media: Use water spray, carbon dioxide, dry chemical, or appropriate foam.

Special Fire Procedures: Fire fighters should wear self-contained breathing apparatus (SCBA) and protective clothing to prevent contact with skin and eyes.

SECTION V. REACTIVITY DATA

Stability: **X** **Stable** _____ **Unstable**

Conditions to Avoid: None reported.

Incompatibility (Materials to Avoid): acids: may release toxic chloride gases (possible explosion with sulfuric acid and potassium permanganate); halogens (may react violently with bromine trifluoride); metals: may be corrosive when wet.

See Section IV. **"** Fire and Explosion Hazard Data".

Hazardous Decomposition or Byproducts: Thermal decomposition of potassium chloride can produce chlorine.

Hazardous Polymerization: _____ **Will Occur** **X** **Will Not Occur**

SECTION VI. HEALTH HAZARD DATA

Route of Entry: **X** **Inhalation** **X** **Skin** **X** **Ingestion**

Health Hazards (Acute and Chronic): Potassium chloride is irritating to eyes, respiratory system and skin. May be harmful if swallowed.

Inhalation: Inhalation of potassium chloride dust is an irritant to the respiratory system. There are no significant harmful effects.

Skin Contact: Skin contact of potassium chloride is an irritant, particularly with moist skin. There is no data for acute and chronic exposure to the skin.

Eye Contact: Eye contact of potassium chloride is an irritant, and a possible abrasion can occur. There is no data for acute and chronic exposure to the eyes.

Ingestion: Ingestion of potassium chloride may cause changes in blood pressure, nausea, vomiting, diarrhea, stomach pain, irregular heartbeat, drowsiness, dizziness, disorientation, internal bleeding, and paralysis. Chronic exposure of potassium chloride causes symptoms similar to acute exposure.

Listed as a Carcinogen/Potential Carcinogen:

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens		X
In the International Agency for Research on Cancer (IARC) Monographs		X
By the Occupational Safety and Health Administration (OSHA)		X

EMERGENCY AND FIRST AID PROCEDURES:

Inhalation: If inhaled, move the victim to fresh air. If breathing becomes difficult, call a physician. Give artificial respiration if the victim is not breathing, and get immediate medical attention.

Skin Contact: Flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Obtain medical attention, if needed.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Obtain immediate medical assistance.

Ingestion: If a large amount is ingested, get medical attention immediately.

SECTION VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material Is Released or Spilled: Notify safety personnel of major spills and/or leaks. Avoid raising dust. Wear protective equipment. Pick up and place in a clean, dry container and hold for later disposal. If necessary, ventilate area after removal of spill.

Waste Disposal: Follow all federal, state, and local regulations.

Handling and Storage: Persons handling this material may use respiratory protection under conditions of frequent use or heavy exposure. The specific respirator selected must be based on contamination levels found in the workplace, must be based on the specific operation, must **NOT** exceed the working limits of the respirator, and must be jointly approved by the National Institute for Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA). Additional protective clothing, such as gloves, lab coats, and splash-proof or dust-resistant safety goggles, should be worn.

NOTE: Contact lenses pose a special problem; soft lenses may absorb irritants and all lenses concentrate them. **DO NOT** wear contact lenses in the laboratory.

SECTION VIII. SOURCE DATA/OTHER COMMENTS

Sources: OHS19310 Potassium Chloride MSDS. Available: MDL Information Systems, Inc., June 2003.
Merck Index, 11th Ed., 1989.
Registry of Toxic Effects of Chemical Substances, RTECS DIALOG file 336; Available: MDL Information Systems, Inc. (accessed August 2003).